

Concept of Private Property in Space – An Analysis

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Abstract: The 1967 Outer Space Treaty specifically states that appropriation of property is not permitted by sovereign nations and the Moon Treaty declares moon and celestial bodies to be the common heritage of all mankind. It is a common notion that the concept of private property is non-existent in view of the existing treaties. There is a growing opinion that recognition of property rights is essential in space activities. It is advocated that for the maximum utilization of the resources in space, which may include both commercial and non-commercial activities, private participation is essential. The paper examines the current position, need and feasibility for private participation and recommends possible mechanisms for the incorporation of property rights in *Corpus Juris Spatialis*.

“The Earth is the cradle of mankind, but one cannot stay in the cradle forever.” -- Konstantin Tsiolkovsky.

1. Introduction

Man in his quest to explore the realms that exist in this universe has been hindered at various stages by factors, such as lack of knowledge, lack of technical skills, geo-political considerations, etc. Currently, space is one of the realms that are the least explored by mankind, while taking into consideration the giant leaps humans have made in all the other spheres. Since the technical skills and cost of engaging in exploration is exceptionally high, space exploration is limited to a select few nations.

The very fact that exploration is done only by a select few countries and the concern that exploitation of resources available in space would be dominated by the select club of “space-faring” nations, led to formation of treaties stating that no nation may appropriate any portion of space or celestial bodies by claim of sovereignty through use, occupancy or by any other means. The first such comprehensive treaty on Space is the Outer Space Treaty, 1967, followed by other treaties on different aspects, which includes the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Convention on International Liability for Damage Caused by Space Objects, Convention on Registration of Objects Launched into Outer Space. While Outer Space Treaty prohibited nations from appropriating moon and celestial bodies using sovereign appropriation, the Moon Treaty went a step further in declaring moon and other celestial bodies to be the ‘common heritage of all mankind’ (Jeremy L. Z., 2006).

Though the concept of private property rights has been expressly declared to be non-existent vis-à-vis exploration of space, especially in light of the Outer Space Treaty, there is growing convergence of opinion that private property rights must be granted in some form to ensure that proper, optimum and unhindered use and utilization of resources available in space can be effectively implemented (Lynn M. F., 2003; Kurt Anderson B., 1993). The advent of this school of thought has received support even at the official level. Clause 4 of the Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interests of All States, taking into Particular Account the Needs of Developing Countries (Annex to the Report of the Committee on the Peaceful Uses of Outer Space General Assembly Official Records, Fifty-first Session Supplement, 1996) which states that International cooperation should be conducted in the modes that are considered most effective and appropriate by the countries concerned, including, *inter alia*, governmental and non-governmental; commercial and non commercial; global, multilateral, regional or bilateral; and international cooperation among countries in all levels of development. The crux of the matter lies in the wording of Article 4. The said Article gives the State the ability to choose the most effective and appropriate mode which may be commercial, non-commercial, governmental, non-governmental, etc. In short, assuming that an alternative clean fuel is discovered on the moon, which can replace the current fuel, mining of such fuel can be done by a private enterprise, subject to the broad objectives of the moon treaty. In other words, the State may delegate certain functions to private bodies, relating to exploration and use of space.

This paper seeks to analyse the necessity of recognising property rights in space. To achieve the objective, we start with the scrutiny of background history of space law, wherein an examination of treaties as well as international law is made in the light of underlying reasons for such enactments, after which, a brief overview of the Treaties currently in vogue, along with implications of such treaties is carried out. The substantive part of the paper in turn deals with the interpretation of Treaties and International law emphasising upon challenges as

regards incorporation of property rights in the realm of space law along with possible solutions, while also examining the need, feasibility and possible methodology to incorporate private property rights in *Corpus Juris Spatialis*.

2. *Corpus Juris Spatialis*: An evolving Jurisprudence

The existing *Corpus Juris Spatialis* is indistinct, consisting mainly of treaties enacted under the auspices of the U.N. It gives an obfuscated view characterised by pedantry, as regards the issue of establishing a concrete regime of property rights on moon and other celestial bodies or parts thereof.

The power struggle between the United States and the former Soviet Union, the two nations involved in the race to space, along with the paranoia and suspicion resulting from the Cold War, fuelled the avoidance of a “race to own” any part of space. The former Soviet Union emerged as the pioneering leader when it launched the first satellite (Sputnik) into orbit in 1957 and landed the Luna IX on the moon in 1966, sending waves of alarm through the United States, which feared that the Soviets would stake a property claim in the moon. This prompted the United States to initiate treaties limiting activities in outer space to peaceful purposes and preventing any state from exercising ownership (Carol R. Buxton, 2004). Other nations feared that the two rising superpowers would dominate space and claim it for themselves.

The space race cooled greatly throughout the 1970s and 1980s. The two superpowers shifted their focus from exploring the Moon to developing and employing space stations. In 1972, President Richard Nixon and Soviet Premier Alexsei Kosygin signed the Apollo-Soyuz Test Project agreement. This agreement signalled the first international cooperative agreement between the United States and the U.S.S.R. The Russian space station Mir and American space station Skylab signalled the end—at least temporarily—of efforts to put humans on celestial bodies. The U.S.S.R. and the United States continued their co-operation but separately probed the outer limits of the solar system with crafts such as the United States' Galileo and the Russian Veneras (Jeremy L. Z., 2006). Today, the international community is witnessing an immense interest in space exploration (BBC News, 2005). Many new developments have shaped the focus of space law in the 21st century. In this context, a brief overview of each of the specific treaties is necessitated, after which a scrutiny of the provisions and also the new-fangled development in this regard.

2.1 The Past: What went before?

Currently there are several treaties in effect that were created to address space exploration. Most of these treaties were drafted during the Cold War, when outer space was seen as the next battlefield and the moon as a potential military outpost. These fears were fuelled by the “space race” between the United States and the Soviet Union, which gained predominance after the later launched ‘Sputnik’, with each country trying to best the other. In 1959, the United Nations General Assembly established the standing Committee on the Peaceful Uses of Outer Space (COPUOS) to respond to this need.

Thus the first seeds of materialization of these efforts came in 1967, when the United Nations drafted the first comprehensive instrument in this regard which came to be commonly known as the Outer Space Treaty, which has 98 States parties, and is said to be the *magna carta* of *Corpus Juris Spatialis*. The provisions were inspired by the principle of freedom of seas and the Antarctic treaty. It was enacted with the objective that “[t]he exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.”

It was followed up by the 1968 Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (the “Rescue Agreement”) and had 88 States parties, which stipulates that astronauts are to be regarded as envoys of mankind in outer space, and are to be rendered all possible assistance. This agreement has more elaborate assistance provisions than the outer space treaty. The 1972 Convention on International Liability for Damage Caused by Space Objects (the “Liability Convention”) had 82 States, which basically supplements the liability rules stipulated by the outer space treaty, in this convention the principles of the Outer Space treaty are elaborated in order to meet a variety of possible situations, including launchings by international organizations. The 1975 Convention on Registration of Objects Launched into Outer Space (the “Registration Convention”) had 44 States parties and has 22 articles providing in considerable and important detail for the machinery of registration; however the articles fail to make clear a time by which the registration has to be made, seemingly a major pitfall.

Finally in 1979, the United Nations adopted the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the “Moon Agreement”), which had 10 States parties and governs the activities of states on the Moon and other Celestial bodies. The substantive provisions of the treaty have two principal objects; to prevent certain military uses of the moon and other celestial bodies, and to establish a juridical regime for the

exploration and exploitation of celestial bodies and of their resources. The Outer Space Treaty and the Moon Treaty is considered by many as the primary body of international law relating to the utilization of space resources (John L, Christopher L, 2005).

2.2 Specific Treaty Provisions: Outer Space Treaty

Article II of the Outer Space Treaty, which states that “[o]uter space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means” stands as the major hindrance as regards the recognition of property rights. There is disagreement about whether this treaty restricts the ability of individuals to hold property rights or whether it simply restricts the rights of sovereign nations to claim portions of celestial bodies (Lynn M. F., 2003). There is a view that the restrictions placed on sovereign nations would naturally extend to individuals through their citizenship, and therefore property rights in outer space is outside the parlance of individuals and individual companies (Wayne N. W., 2005).

Another point of discussion is, with reference to the prohibition of appropriation. Some argue that the appropriation clause simply bars ownership of the land, not the resources found within the land, which can be extracted and removed as private property (Eric H., 1994). Others argue that the resources are part and parcel of the land and cannot be treated separately from it (Art 11, paras (3), (7) (a), Moon Treaty, 1979). In addition, critics also argue that this provision is a result of the socialist ideals that were prevalent at the time but it is outdated and at loggerheads with today's prevailing free market economy (Lynn M. F., 2003).

Nevertheless, there is actually a wide variety of space activities involving clearly delineated ownership recognized by national legal bodies throughout the world (Henry R & Franz G., 2005). Anything that is launched into space is deemed to be owned by the launching party or state, including the launch vehicle, all of its associated stages and parts, and the payload that is placed into space (Art. VIII, Outer Space Treaty, 1967). Not only do property rights attach to these objects, but the owner(s) can be held singularly and jointly liable for damage caused by these objects (Art., IV, Liability Convention, 1972). Thus, sovereignty in some form exists for satellites and aboard space stations. Similarly, ownership of permanent structures that might be constructed on celestial bodies, including the moon, will vest in the company or state building the structure, at least to the extent it is placed “on a celestial body.” Anything taken from space and returned to the earth becomes the property of the person, company, or government that performs the action, given the absence of United Nations treaty provisions prohibiting such ownership (Henry R & Franz G., 2005).

Thus we can see that as the treaties stand today, on accepted interpretations of the provisions of the treaties, ownership and possession rights are not entirely divorced from the sphere of *Corpus Juris Spatialis*.

2.3 Moon Treaty

The Moon Treaty was signed in 1979 as the expanding US space program led to the possibility of actually using lunar resources (Rosanna S., 2005). The moon treaty however, has not been able to command the same popularity as the Outer Space Treaty, 1967 moreover this Treaty was not accepted far and wide. Besides no major space power has signed it, presumably because it further restricts ownership and prohibits any property rights until an international body is created and the requirement of “equitable sharing” is met consequently. The Moon Treaty does allow “States Parties in the course of scientific investigations to use mineral and other substances of the moon in quantities appropriate for the support of their missions” and it permits individual states to construct space stations on the moon and retain jurisdiction and control over these stations (Art. VI).

While the Common Heritage doctrine as developed in the Moon Treaty is arguably beneficial for the developing states, the space powers see it as a hindrance to the development of space due to the restriction it places on property rights and ownership of resources (Reynolds, 1992). The developed nations fear that adoption of the common heritage principle in space exploration would tantamount to transfer of wealth, political power, and technology from the space-faring nations to the Third World countries (Moon Treaty Hearings, 1980). Some scholars consider the Moon Treaty to have little practical value, while others consider it already obsolete (Lynn F., 2003).

On further analysis of the treaty, the language prohibiting a claim to property rights of “natural resources in place” ostensibly permits, by negative inference, the removal of natural resources not in place or removed from their natural setting. In addition Article XI's language which states that “[n]either the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property.” would run contrary to this view. However, when compared with the specific activities associated with property rights, the Moon Treaty does envision substantive property rights (John L. & Christopher L., 2005).

2.4 Common Heritage of mankind

There is a widespread debate as to whether the “common heritage concept” is indeed part of customary international law, with strong views expressed on both sides. However it is felt that, the common heritage concept is not in tune with the development in today’s world.

In the age of private and commercial wealth, asserting ownership in outer space seems no longer unimaginable. According to the common heritage of mankind principle, nations manage, rather than own certain designated international zones. No national sovereignty over these spaces exists, and international law (i.e., treaties, international custom) governs. The common heritage of mankind principle deals with international management of resources within a territory, rather than the territory itself (Christopher C. J., 1999). Developed nations interpret the principle as meaning that “anyone can exploit these natural resources so long as no single nation claims exclusive jurisdiction” over the area from which they are recovered. Simply stated, every nation enjoys access and each nation must make the most of that access. The heritage lies in the access to the resources, not the technology or funding to exploit them.

The Common Heritage concept, formulated during the cold war era, though well intentioned, does not serve any useful purpose in the current scenario – the free market economy. The freedom granted to the states for exploration and use cannot be mired. In this regard, it is pertinent to note that the earlier Environmental Law provisions, starting with the Stockholm declaration, 1972 did not specifically address the development agenda, in the line of commercial use. However later on the international community had to give in to the development concerns and draft the subsequent provisions accordingly as amply illustrated form the Rio Declaration, 1992.

Besides as discussed earlier, by virtue of the Outer Space treaty and Moon treaty, the states have the freedom to ‘explore’ and ‘use’ the outer space, which including using them for commercial purpose. It is our view that the space faring nations, with their advanced technology should not be prevented form utilizing the resources of the space. What has to be done in such a case is to ensure that, it does not adversely affect outer space and its resources than to have a blanket ban on such activities.

The Common Heritage Concept binds nations and firms to make the most of what their access grants them. Thus, if a nation or firm is unable to properly exploit a resource found in international territories, then that resource should be left to a nation or firm that is able. This view is aligned with the “*first in time, first in right*” view of ownership. Industrialized nations promote this view because, unlike the limited access view of the developing world, unlimited access promotes and rewards private investment. (Jeremy L. Z., 2006).

Therefore it is clear that possessionary rights do exist in space, even going by the treaties. Thus as a naturally following corollary, the states may grant property rights, in this regard to the private individuals, in compliance with International Law.

2.5 Recent Developments

In January 2004, the US President George W. Bush announced his vision for the future of space exploration and the development of space resources and infrastructure and created the Commission on Implementation of United States Exploration Policy which recommends that Congress increase the potential for commercial opportunities related to the national space exploration vision by: *1) providing incentives for entrepreneurial investment in space; 2) creating significant monetary prizes for the accomplishment of space missions and/or technology developments; and 3) assuring appropriate property rights for those who seek to develop space resources and infrastructure.* The report also recommends protecting and securing the property rights of private industry in space and recognizes that the issue of private property rights in space is a complex one involving national and international issues (Presidents Comm., 2004).

A general view in this regard is that the implementation of this vision requires an overhaul of the current treaties and laws that govern property rights in space in order to develop better and more workable models that will stimulate commercial enterprise on the moon, asteroids, and Mars. The expansion of a commercial space sector to include activities on celestial bodies requires the establishment of a regulatory regime designed to enable, not inhibit, new space activity. The development of specific laws, which are consistently applied, will create a reliable legal system for entrepreneurs, companies, and investors. The establishment of a reliable property rights regime will remove impediments to business activities on these bodies and inspire the commercial confidence necessary to attract the enormous investments needed for tourism, settlement, construction, and business development, and for the extraction and utilization of resources (Rosanna S., 2005).

The working of the International Space Station (“ISS”) and the International Telecommunications Union (“ITU”) is showcased as the steps to be emulated in order to achieve a workable framework, so as to recognize some form of property rights in space. The Antarctica Treaty model (Antarctica Treaty System, 1959) is also another approach that is said to be adaptable with regard to space laws.

All these developments showcase a growing need to address the concept of property rights in space law. In addition, space exploration is no more limited to nations alone, and neither confined to realm of science fantasy

only. Commercial activities in space are gaining momentum, (Micheal C., 2004) and more and more participation of private individuals is the need of the hour, for which an explicit recognition of property rights is a necessity.

3. Challenges

In addressing private property rights one must necessarily address the challenges arising in the event that property rights are granted. These vary from environmental concerns to use of such rights to defraud people. In the paper we have felt a need to address the core concerns related with property rights in space.

3.1 Degradation of Celestial Bodies

One of the primary concerns is the degradation of celestial bodies in exercise of property rights granted to persons. The International community fears whether degradation of celestial bodies would have a negative impact on the environment of the Earth. Man seems to have an inherent trait to alter the ecology of his habitat sometimes knowingly, sometimes unknowingly. Space is one of the very few realms that mankind has not been able to effectively pollute, but even that challenge is being overcome. The issue of space debris is one of such concern. Even in the absence of private players, space debris is now assuming alarming proportions, especially since mankind's contribution to the increase in space debris is substantial. In the event that there exists a possibility that, the climate of earth maybe negatively affected, a thorough study must be undertaken to swot up the possible repercussions of such degradation. And if property rights are indeed deemed to be fit to be incorporated into space law, the issue of pollution of space environment will need to be addressed on "war footing".

Another classical example is the offer of the company TransOrbital. It is a private company that, through its "TrailBlazer lunar orbiter," is offering the "first delivery service to the moon". TransOrbital claims it is "the only private company to be authorized by the [U.S.] State Department and [the National Oceanic and Atmospheric Administration] for commercial flights to the Moon". The company's delivery system will take capsules that contain items of the customer's choice, including business cards, jewellery, art, and cremated remains, to the Moon. While, it maybe argued that such action is detrimental to the ecology of the moon, it cannot be said to be the first of its kind. Although the various Space treaties explicitly prohibit the conducting of nuclear tests in space, space tourism will cause its fair share of problems including despoilment of the moon surface.

3.2 Res Nullius, Res Communis, Common Heritage of Mankind or, principle of sovereignty

The second major challenge is choosing between the concepts of *res communis*, *res nullius*, *common heritage of mankind* and *principle of sovereignty*. Under Roman law, the idea of *res communis* meant community property incapable of being appropriated by any person (Brandon G., 2004). In the final version of the 1967 Space Treaty, *res communis* principle was explicitly articulated in the Preamble and Articles I and II and implicitly expressed in Articles III and IV.

For any principle to be accepted by the international community, primarily, it must be clear and well-defined so that the international community may integrate the concept into international law. Next, nations must abide by the principle and widely agree on its authority in international law. Finally, customary recognition of the concept must be manifested by States or, at a minimum, be supported worldwide to verify its broad acceptance (Jefferson W., 1993). It is the argument of the authors that *res communis* is a recent principle and furthermore is limited to merely the signatories to the treaty. The fact that *res communis* concept is not a binding principle of international law may already be implied within Article XVI of the 1967 Space Treaty, which allows parties to withdraw from the Treaty after they give one year's written notice. Consequently, nations can easily withdraw from the 1967 Space Treaty and disregard the *res communis* classification of outer space once their nation's colonization of space becomes a reality.

Common heritage of mankind is a concept that has found acceptance in UNCLOS – III (Brandon G., 2004; Davis M., 1993; Grier C. R., 1986). It can maybe be called a socialist principle (Antonio C., 1986) in that it seeks to achieve a certain amount of parity in the redistribution of the mineral wealth among nations. Ironically, while Russia and other countries have ratified UNCLOS – III, the common heritage clause is one of the prominent reasons that Russia quotes in not ratifying the Moon Agreement (Kermal B., 1998)

The Concept of *Res Nullius* again is of Roman origin and states that a property does not belong to any person till a person claims ownership rights, (Lind L.B., 1982). Unlike *res communis* the property is capable of being appropriated by a sovereign. This is a corollary to the sovereign principle in international law. However, the application of *Res Nullius* is incapable in *Corpus Juris Spatialis* consequential to the existence of Article II in the Outer Space Treaty which specifically prohibits the national appropriation of parts of moon or other celestial bodies. If one were to discard the *Res Nullius* principle on the basis of Article II then one must necessarily discard the sovereign principle on the same ground. As stated earlier the *Res Nullius* restriction does not apply to countries

that are not parties to the treaty. Therefore, it may be argued that non-members to the treaty may discard the provisions of the treaty especially in light of Article IX and Article XVI of the treaty.

Having considered all of the above principles, it is the opinion of the authors that the principle of '*res communis*' is the most apt to the concept of space law. Though '*Res Communis*' prohibits appropriation of property by a person, it does not, however prohibit occupation or use of such property. As discussed earlier, possession rights exist, though implicitly.

4. Proposed Model for Property Rights

The proposed model for property rights is based on the doctrine of first possession along with the principles of *res communis* and *res nullius* to a limited extent. The *principle of sovereignty* cannot be applied since all the treaties relating to the exploration and use of outer space are unanimous in their opposition to sovereigns claiming sovereignty over portions of outer space including moon and other celestial bodies.

4.1 Principle

The doctrine of first possession is the pre-eminent system for establishing initial property rights in land or a resource, as it accords claimants with legitimate property rights over territory and resources before other prospective claimants can do the same. First possession rules are a basic component of and exist extensively in common law statutes and judicial decisions, civil law, traditional Islamic and African legal systems, and informal custom-made law, (Brandon G., 2004). The proposed model for property is based on the *res communis* and the *doctrine of first possession*.

The primary concern of any person seeking to invest in space is protection of resources invested and reaping benefits from the resources so invested. Thus, to encourage investment in space, property rights in some form must be granted. In The Outer Space Treaty, 1967 the concept of *res communis* was accepted to serve as a defence against sovereign appropriation of property. The proposed model along with its implementation mechanism seeks to address the concerns of both the under-developed and the developed nations.

In the proposed model the first pre-requisite is actual possession coupled with carrying on a space activity considered acceptable under international law. Mere possession of property without the conduct of any work will not grant the possessor any rights that he may enforce against third persons. As long as actual possession can be proven rights of the possessing party in exploiting the area under its control would be protected. The preliminary concern with regard to determining the permissible activities in Space may be addressed by the international organization envisaged under the proposed model, which maybe established under the aegis of United Nations in conjunction with Committee on Peaceful use of Outer Space.

Property rights would not accrue merely by reason of possession. In all instances where either actual possession of the property is lost or, the space activity, which was undertaken, ceases, property rights of the possessor cease to exist. An excellent suggestion forwarded by many is the maintenance of a registry of claims, (John L & Christopher L., 2005). A registry of claims maybe maintained of property claims along with a description of purported activities that are sought to be carried out in such area. Space activities that may be considered to be acceptable maybe decided on the basis of treaties which should have at least all the space exploring nations as signatories.

The first difficulty that may be encountered can be in the following form. What if X reaches asteroid Y first and Z reaches later. But, Z is able to commence operations before X. In such a case who maybe called as the possessor? Here, the proposed model would operate in the favour of Z. This is primarily to ensure that a non-fruitful claim does not arise. Another recommendation forwarded to ensure only genuinely interested parties make a claim is by attaching a small fee for application, which is non-refundable.

The second difficulty is transferability of rights to other persons. As regards sale, since ownership rights cannot accrue there can be no sale of extra-terrestrial property (vide art. II; Outer Space Treaty, 1967, art. XI; Moon Treaty, 1979). With regard to rights to lease, it can be stated that such rights maybe permissible to a limited extent. In such cases, an amount that maybe considered as adequate maybe fixed by the International Space Resource Management Organization. Where there is transfer of right an amount maybe fixed by the International Space Resources Management Organization to be paid to it over and above the consideration for the transaction. Furthermore, in all cases of transferability of rights approval of the International Space Resources Management Organization must be obtained as a condition precedent. The purpose of imposition of payment for transaction is two-fold. Primarily, it will operate as a check upon unnecessary transfer of rights and secondarily, it will help the body function independently since it's funding would be sufficient to carry out its responsibilities fairly and with due regard to all the relevant factors.

4.2 Implementation

As discussed earlier, there should be an authority for determining permissible activities in space. A practical solution is having an authority in the lines of the International Sea Bed Authority, which would create economic incentive for nations and firms to simultaneously invest in outer space. (Jeremy L. Z., 2006). The primary purpose of the organization would be to regulate the use and exploration of outer space and therefore, all the space-faring nations should be part of the treaty. Alternatively stated, one may state that in order for a State or its citizens to carry on commercial activities in space, the State should be a member of the treaty. On the issue of whether private persons may be granted membership, it is the opinion of the authors that once the State of which the persons are citizens become members of the International Space Resource Management Organization, private individuals would derive from the right conferred upon the State.

The proposed, International Space Resource Management Organization maybe formed under the aegis of the General Assembly and later when feasible may be made as a specialized organ of the United Nations. The objective of the International Space Resource Management Organization may be primarily classified into the following namely:

1. To regulate the use and exploration of outer space including identification of permissible outer space activities and ensuring that sustainable use of space resources is followed.
2. To draft guidelines with regard to protecting the space environment.
3. To develop the *Corpus Juris Spatialis* in tandem with other space agencies such as but not limited to United Nations Office for Outer Space Affairs, Committee on Peaceful Use of Outer Space, etc.
4. Provide a dispute resolution mechanism for resolving disputes in accordance with the principles of international law.
5. To monitor the commercial activities in Outer Space and report to the General Assembly of the United Nations.
6. To promote the development of Outer Space use and exploration capabilities of developing nations.

In order for the International Space Resource Management Resource Organization to function effectively and discharge its duties diligently, it should consist of the following organs namely:

4.2.1 General Body

A general body would be the Parliament of the organization. All members by virtue of them ratifying the provisions of the treaty establishing the organization would become members. The primary purpose of the General assembly would be policy formulation and deliberating upon the reports filed by the monitoring committee. It should have the power to ratify the recommended action along with power to impose penalty on erring members.

4.2.2 Financial Committee

The primary function of the finance Committee of the proposed International Space Resource Management Organization would be to determine the quantum to be charged in conduct of outer space activities. It would be within the powers of the committee to recommend on the penalties to be imposed on receiving the report of the monitoring committee.

The financial committee shall also be in charge of preparing the budget of the organization and also recommend the division of monetary grants to developing nations to develop their space programs. However, the budget must be presented to the general body and must be approved by the General Assembly.

4.2.3 Environmental Concerns Committee

The Environmental Concerns Committee should be established to study the effects of commercial space activities and possible remedies for preventing degradation of outer space including celestial bodies. It should also be within the purview of the environmental concerns committee to recommend the addition, deletion or alternation of permissible space activities to the General body. Periodic studies must be conducted by the Environmental Concerns Committee to study the effects of commercial outer space activities and recommend methods, which maintain the balance between commercial activities in outer space and space environment concerns.

4.2.4 Monitoring Committee

In order for the International Space Resource Management Organization to truly fulfil its goals, it must be able to effectively monitor the activities by commercial entities in space. The monitoring committee would be the eyes

and ears of the organization. The monitoring committee should be empowered to visit the outer space sites of commercial enterprises to ensure that the rules and procedures with regard to Outer Space Activities are strictly complied with.

It is our opinion that the commercial enterprise whose site the monitoring committee is visiting should bear the costs for transfer and return of the monitoring committee. It is based on the logic that every enterprise should have a transport link between the worksite and earth and therefore, the monitoring committee should be able to use the transport link. The Monitoring Committee should file its report to the General body as well as recommend course of action as it may consider fit for violation of the terms by the commercial enterprise.

The Monitoring Committee's composition should include among others, members from developing countries. Since, the space-faring club is exclusive and limited to only a few countries, the monitoring committee is the only verification method available to the International Space Resource Management Organization to verify if the activities are being conducted in accordance with the laws and procedures laid down by the International Space Resource Management Organization. In having developing countries as well as countries whose space research is in its infancy on the monitoring committee, impartial functioning of the monitoring committee can be ensured.

4.2.5 Dispute Resolution Body

Unless there is a dispute resolution mechanism available, the complete fulfilment of the goals of the organization cannot be achieved. The proposed International Space Resource Management Organization shall be duty bound to enforce the decisions of the appellate mechanism. The dispute resolution mechanisms would become operational when there is a conflict with regard to the aspects of outer space use and exploration and in the commercial use of outer space and other celestial bodies. The jurisdictional issues of the second appellate mechanism maybe sorted out in the treaty provisions itself.

Two levels of the appeal may be provided, one within the organizational structure and the second while administratively within the organization independent. The second level maybe more akin to a judicial body, whereas the first maybe an administrative appeal. The first appeal maybe preferred on the formulation of the report by the monitoring committee, but before the general body approves it. In the event that the appeal is preferred before approval of report by the monitoring committee, until the appeal has been dealt with, the general body cannot pass a resolution approving the report and the recommended course of action.

The second level of appeal starts in operation once the appeal to the internal appeal mechanism has been exhausted. In the event that the party prefers an appeal to the second appellate body, the general body is competent to approve the report and recommended course of action by the Monitoring Committee. The approved course of action would become active once the resolution for approving the course of action is passed.

It is imperative that the second appellate body should be financially independent of the International Space Resource Management Organization. Towards this extent, there can be an inbuilt provision for payment of the expenses of the appellate, which cannot be deferred or cancelled. The second issue is with regard to selecting persons to the second appellate body. Persons who have sat at the highest court of a country are eligible to sit as judges in the appellate body. However, persons with sound knowledge and active contributories to the body of *Corpus Juris Spatialis* may also be selected as judges.

5. Conclusion

It is time that the immense resources of space are made use for the betterment of mankind. Recognizing some kind of property rights and paving way for private players to animatedly participate in space activities would in effect be a calculated stride towards the achievement of this objective.

The various treaties, which govern the realm of space, do not provide an apt scenario for this purpose. However it would not be practicable to disregard the entire jurisprudence in this regard which has the backing of the majority of the international community and is under the auspices of the United Nations.

Therefore an astute way out would be the creation of a workable format under the current species of legislation, which is in tune with the current developments and is adequate to hold ground for the considerable future as well. Thus the granting of Possessionary rights to private parties by virtue of transfer of such rights from the states would be in tandem with this purpose. And the creation of an independent international authority, for the monitoring of such activities involving the developing nations would ensure that there is at least some kind of transfer of technology in addition to the safeguarding of various common interests along with the outer space environment as well.

Finally, Article I of the Outer Space Treaty declares that, "*the exploration and use of outer space..... shall be the province of all mankind*". Thus, the recognition of property rights in outer space, which goes on to

facilitate the application of this principle, is to be considered and effectively put to application in order to make the best use of the colossal resources that outer space has to offer.

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